

**REMARKS**

Claims 89-102, 104-108, and 121-158 remain pending after amendment. Claims 102, 144 and 156 stand withdrawn from consideration.

**Claim Amendments**

By this amendment, claims 57-88, 103 and 109-120 are cancelled. Claim 89 is amended, support for which resides in cancelled claim 103. No new matter is added by this amendment.

**Allowable Subject Matter**

Applicant thanks the Examiner for the indication of allowable subject matter of claims 57-62, 64-69, 80-85, 87, 88, 97, 100, 109-117, 119, 120, 135-143, 145, 149, 150 and 158 to the extent that the claims are directed to the elected invention. However, for the reasons indicated in detail below, all pending claims are believed to be allowable.

**Rejection under 35 USC 103(a)**

Claims 70-79, 89-96, 98, 99, 101, 103-108, 121-134, 146-148, 151-155 and 157 stand rejected under 35 USC 103(a) as being unpatentable over *Jackson* in view of *Riley et al*, *Wawretschek et al*, *Herschler '421*, *Herschler '039* and *Boumous et al*. This rejection is respectfully traversed.

Applicant initially notes that all claims under examination are now directed to **methods of treating neoplastic disease** comprising administering an anti-neoplastic

effective amount of a composition comprising: (a) a physiologically acceptable source of assimilable copper; (b) **salicylic acid** or an **alkali or alkaline earth metal salt thereof**; and (c) vitamin C. The efficacy of such compositions in treating neoplastic disease is amply demonstrated in the various examples of the present application (see Examples 11 to 18, demonstrating inhibition and regression of tumour growth in animal and clinical studies).

All claims relating to compositions *per se* are cancelled from the present application, and thus the Examiner's objections in the Office Action, so far as they relate to the previous composition claims, are now moot.

The claimed method is neither disclosed nor suggested by the cited prior art, as is apparent from the following discussion of the deficiencies of the prior art relied upon by the Examiner.

***Jackson***

*Jackson* discloses a dietary supplement for supplementing the micronutrient and phytochemical needs of women at various stages of their life cycle to prevent or reduce the risk of (not treat) a number of conditions, including some cancers. The supplement is a composition comprising copper, vitamin C and thirteen other components (including manganese, iron and zinc) in admixture with a biologically acceptable carrier (see column 2, line 34 to column 3, line 21).

The purpose of the compositions disclosed in *Jackson* is to supplement the specific micronutrient and phytochemical needs of a woman during each of her adult life stages, with the objective of generally promoting her well being, and thereby hopefully preventing or reducing various health risks to which she may, during this period, be

exposed (see column 1, lines 4 to 9). One of the many health risks include "some cancers" (see column 1, lines 21 to 28). It is disclosed (see column 1, lines 26 to 28) that the incidence and risk of these conditions varies with each life stage and has been shown to be influenced by diet and dietary supplements.

There is, however, no suggestion in Jackson that the dietary supplements disclosed therein would be of any utility where **treatment of cancer** is concerned. As the skilled person would readily appreciate, while a dietary supplement may be of benefit in maintaining the general well being and health of an individual, and thus conversely have some utility in reducing the chances of that individual contracting cancer or some other form of disease or illness, this by no means raises any expectation that the supplement would be effective in treating cancer or other diseases once established.

Equally, the compositions disclosed in *Jackson* do not contain salicylic acid, or any alkali or alkaline earth metal salt thereof. Thus, there is no suggestion in *Jackson* that salicylic acid, or any alkali or alkaline earth metal salt thereof, would be useful even in reducing the risk of cancer being contracted, let alone that it would be of any use in *treating* cancer.

### ***Riley***

*Riley* discloses (see column 1, lines 20 to 26) a modular system of multivitamin and mineral supplementation to replace micronutrients lost as a result of lifestyle factors and inadequate diet thereby improving public health by insuring adequate intake of micronutrients needed for disease prevention. Modules 4, 5 and 6 of *Riley* contain aspirin, with Modules 5 and 6 further including copper, and vitamin C, together with 24

other components including manganese, iron and zinc (see Table II). It is furthermore stated (see column 6, line 62 to column 7, line 6) that the modular system can be used to reduce the risk of chronic diseases such as cancer (amongst others).

Again, however, and as with *Jackson*, there is in *Riley* no suggestion that the disclosed modular systems would be of any benefit in *treating* cancer.

Equally, whereas the claims of the present application require the use of salicylic acid or an alkali or alkaline earth metal salt thereof, Modules 4, 5 and 6 of *Riley* use aspirin, i.e. acetylsalicylic acid, which is not within the scope of the claims. Aspirin is used in *Riley* primarily for its anti-platelet aggregating capacity, so as to reduce the risk of coronary heart disease (see column 5, lines 9 to 13 and 31 to 39), although brief reference is made to it also being able *to reduce the risk of* certain cancers (column 16, lines 24 to 26). Moreover, as evidenced by the extracts from Martindale "The Complete Drug Reference", 32<sup>nd</sup> edition (1999) (of record), this anti-platelet aggregating capability only occurs with acetylated salicylates, i.e., it is present for aspirin but not for the claimed salicylic acid or salicylates.

While referring to aspirin *per se* in Table II, *Riley* does also state at certain other points that "aspirin or the like" may be used (see column 5, lines 9 to 14, column 16, lines 15 to 17, and column 21, lines 48 to 62). However, what is meant by this is further explained in column 21, lines 48 to 62. As explained in this passage, according to *Riley* either aspirin or a "bioequivalent thereof" should be used, or a compound used "which can be easily converted to aspirin". Amongst such compounds, salicylic acid and salicylates are listed, it being confirmed at lines 59 to 62 that the compound to be used

should be "extracted, processed, tested, and utilised either as is (bioequivalent) or converted to acetylsalicylic acid (aspirin)".

As explained above, salicylic acid and alkali or alkaline earth metal salt thereof cannot, in the context of *Riley*, be considered bioequivalents of aspirin, it being common knowledge (see Martindale) that they lack the very anti-platelet aggregating capability for which aspirin is, in *Riley*, primarily used. Thus, there is in fact no suggestion in *Riley* to use salicylic acid, or any alkali or alkaline earth metal salt thereof, in the modular systems described therein, only that salicylic acid and salicylates may be a suitable source of acetylsalicylate (aspirin).

It follows, therefore, that, like *Jackson*, *Riley* also does not disclose the use of salicylic acid, or any alkali or alkaline earth metal salt thereof even in a composition for reducing the risk of cancer, let alone as part of a composition for treating cancer.

### ***Wawretschek***

*Wawretschek* discloses a means of reinforcing the pharmacological action of medicaments which exhibit an affinity for linking with blood proteins *in vivo* and *in vitro*. It is an object of the invention to find a means which is capable of providing a controlled increase of that portion of the drug to be used which is not bonded to the serum albumen (see column 1, lines 55-58) and that this is achieved by the use of orotic acid and/or a physiologically tolerable orotic acid salt.

In Example 5 of *Wawretschek* the analgesic efficacy of sodium salicylate is examined both alone and in a binary composition with choline orotate. There is no disclosure of the use of copper or vitamin C (or, for that matter, manganese, iron,

sulphur or zinc). Moreover, there is no teaching whatsoever relating to the treatment neoplastic disease.

***Herschler ('421)***

*Herschler* '421 discloses (see column 1, lines 12 to 18) the use of methylsulphonylmethane ("MSM") to ameliorate the symptoms of stress (specifically gastrointestinal upset, inflammation of the mucous membranes and allergic reactions). In one example (Example VIII, column 12, lines 11 to 47), MSM is administered with and without ascorbic acid (Vitamin C) to treat mucous membrane inflammation at least partly associated with lung tumours. Treatment (both with and without Vitamin C) appears to have alleviated the patients' conditions, and caused significant regression of tumour mass.

Thus, *Herschler* teaches the use of compositions comprising MSM, optionally including Vitamin C, for the treatment of lung tumours and associated inflammation of the mucosa. However, there is no disclosure of the use of either copper or of salicylic acid, or an alkali or alkaline earth metal salt thereof, as part of a treatment for neoplastic disease.

***Herschler ('039)***

*Herschler* '039 discloses (see abstract) that MSM is an assimilable form of sulphur. It also discloses (see Example 36) that supplementation of diet with 2 wt % MSM can inhibit DMBA-induced mammary carcinoma in rats and (see Example 37) that supplementation of diet with 3 wt % MSM in water can protect against otherwise lethal spontaneous mouse lymphomas. As with *Herschler* '421, however, there is no

disclosure of the use of either copper or of salicylic acid, or an alkali or alkaline earth metal salt thereof, as part of a *treatment for* neoplastic disease.

***Bounous***

*Bounous* discloses a formula diet comprising whey protein concentrate to enhance mammalian immune response. The formula diet consists of undenatured whey protein concentrate and a protein-free diet powder containing, among other components, “vitamins and minerals” (see column 6, lines 34 to 56). The “vitamins and minerals” include vitamin C and copper, together with 22 other components (including iron and zinc). It is disclosed (see column 24, lines 26 to 54) that the formula diet reduces the size of DMH-induced tumours in mice. However, according to this same passage (see in particular lines 39 to 41), this anti-cancer effect is indicated as being attributable purely to the whey protein. The vitamins and minerals appear to have only been added to meet the nutritional requirements of the mice (see column 6, lines 46 to 56) in the controlled conditions of the animal experiment being conducted.

There is no disclosure in *Bounous* that vitamin C or copper have any particular utility in treating cancer. Moreover, the compositions disclosed in *Bounous* do not contain salicylic acid, or an alkali or alkaline earth metal salt thereof, at all. Accordingly, there is no disclosure or suggestion in *Bounous* of using vitamin C and copper, in combination with salicylic acid, or an alkali or alkaline earth metal salt thereof, as a treatment for neoplastic disease.

The Examiner states that the test for obviousness is not that the claimed invention must be expressly suggested in any one or all of the cited prior art, but rather what the combined teachings of the prior would have suggested to those of ordinary

skill in the art. However, applicant maintains that a method of treating neoplastic disease, as presently claimed, is not taught by the combined teachings of the prior art.

In order to assess what is obvious from the combined teachings of the prior art, one must first consider whether the combination of documents necessary to arrive at the claimed subject matter is, in fact, an obvious one to make. To put it another way, one cannot assert obviousness based on or combining (based on hindsight knowledge of the claimed invention) selected teachings from various prior art documents if, based on the common knowledge the person skilled in the art, it would not have been obvious to combine the various documents in the first place.

In this regard, the presently claimed invention is, as noted above, a method of treating neoplastic disease, successful treatment having been demonstrated in Examples 11 to 18 of the present application. Thus, the initial question to be asked is whether the skilled person, if seeking to develop ***a novel treatment for neoplastic disease***, would have referred to certain of the cited art at all.

As noted in the analysis presented above, *Wawretschek* is not concerned with the treatment of cancer at all. Thus, the compositions taught in this document must be considered irrelevant for the purposes of the present invention, since it cannot plausibly be suggested that it would have been obvious to one of ordinary skill in the art to start considering documents relating to, for example, analgesia, when seeking new treatments for cancer.

Similarly, neither *Jackson* nor *Riley* relate to *treatment* for cancer. Instead, these documents are concerned with multivitamin and nutrient compositions intended to improve general health and so reduce the *risk of* contracting diseases (such as cancer).



Again, it is respectfully submitted that it would not have been obvious to the skilled person to refer to documents dealing with general nutrition and health, when attempting to devise new treatments for neoplastic disease. Utility in preventing cancer from appearing, by way of improving general health and diet, does not equate to an obvious utility in treating cancer. By way of a simple example, it is well known that dietary fibre is recommended as a means of reducing the risk of contracting bowel cancer, but equally obviously the usual treatments for bowel cancer are radio-chemotherapy and/or surgery, not eating more fibre.

Thus, again, the skilled person would not have found it obvious to refer to either of these documents. Moreover, even had the skilled person referred to *Jackson* or *Riley*, he would not have considered either document to suggest any methods of treating cancer, since neither document asserts that the compositions disclosed therein have any use in treating cancer or provides any data (clinical, animal, or even *in vitro*) to suggest the same.

*Herschler* and *Bounous* do disclose compositions having apparent utility in treating at least some forms of cancer. However, these documents teach that, respectively, MSM (either with or without Vitamin C) has utility in reducing tumour mass, and whey protein (with vitamin supplements to support the general health of the mice in the study) has utility in reducing tumours. Thus, even if the skilled person were to have read these documents in combination, the combination would have fallen far short of teaching that copper, salicylic acid or an alkali or alkaline earth metal salt thereof, and vitamin C, should be combined and used as a treatment for neoplastic disease.

Finally, it should be noted that, even if the skilled person were to have taken the step of reading *Jackson* and *Riley* in combination with *Herschler* and *Bounous*, and taken the step of attempting to use some combination of the various components of these compositions as a treatment for neoplastic disease despite the fact that neither *Jackson* or *Riley* give any indication that the compositions in these documents are effective in treating cancer), he still would not have arrived at the claimed subject matter, since none of these documents teach these use of *salicylic acid or an alkali or alkaline earth metal salt thereof* (the definition, in *Riley*, of bioequivalents of aspirin not encompassing these compounds, for the reasons given above). The only document to disclose the use of salicylic acid or an alkali or alkaline earth metal salt thereof is *Wawretschek*, in which sodium salicylate is used for its conventional purpose as an analgesic, there being therefore no reason from this document (or any of the others cited) to use sodium salicylate as part of a treatment for cancer.

It is therefore respectfully concluded that, contrary to the assertion of the Examiner in the Action, there would in fact have been no motivation for one of ordinary skill in the art to use copper, salicylic acid and vitamin C to treat neoplastic disease, as required by the claims of the present application as amended, and such a method would not have been obvious one of ordinary skill in the art.

The rejection under 35 USC 103(a) is this without basis and should be withdrawn.

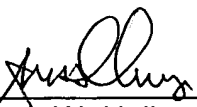
The application is now in condition for allowance. Allowance of claims directed to the generic invention is believed proper.

A check in the amount of \$795.00 is attached as payment for the requested four month extension of time.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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